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(71) Applicant: SHARP CORP

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(72) Inventor: DEIBITSUDO EZURA  
GURAHAMU JIEI UTSUDOGEITO  
POORU MEI  
MIKAERU JII ROBINSON  
JIYONASAN HARORUDO

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(54) OPTICAL DEVICE

(57) Abstract:

PURPOSE: To effectively increase the resolution of a spatial modulator (SLM) for printing without decreasing the size of pixels by arranging respective image elements of an array so that images of plural light sources are formed at respective positions on an image surface through a spatial optical modulator.

CONSTITUTION: The illuminators of an array 1 adjoin to one another and the respective macrolenses of an array 3 form adjacent images of the illuminators on the image surface in every complete cycle of operation. Image sets formed by adjacent microlenses can be arranged adjacently by properly selecting the size of the device. Therefore, images in one complete cycle of the operation are multiplexed with time, but the display area on the image surface 5 is spatially filled to provide a complete image. This time multiplexing can effectively increase the resolution of the SLM without using any high-resolution SLM which is high in manufacture cost or can not be manufactured.

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